

Cystic Fibrosis Related Diabetes and Exercise

This leaflet gives you advice on Diabetes and Exercise. It is not meant to replace discussion between you and your clinician, but as a guide to be used in connection to what is discussed with your clinician.

Exercise helps our general health. Exercise has many benefits for people with Cystic Fibrosis. Exercise is a natural form of chest physiotherapy, stimulates coughing, improves cardiovascular health and improves mental attitude/feeling of well being.



Usually, a person without diabetes will not experience a low blood sugar (hypoglycaemia) during exercise. This is because their body naturally reduces the amount of insulin released. However when you have diabetes increased activity of any sort will speed up the rate at which you use glucose, as it is burned up for energy. This can put you at risk of a low blood sugar level (hypo) during increased activity/exercise. Therefore, it is important to plan ahead to prevent unnecessary hypos during or after your activity.



Exercise that is much more than you usually do (either more vigorous or more prolonged) may lower your blood glucose level for up to 18 hours afterwards. It also applies at other times of increased physical activity e.g. spring cleaning, moving house, shopping, sex, or gardening. This is due to the body needing to replace the glucose stored in your muscles, which were used up during the exercise.

Things to consider when planning physical activity or exercise:

- Always carry quick acting carbohydrates such as lucozade/glucotabs
- Monitor blood glucose before and after any physical exercise or activity
- Treat your hypo if blood glucose drops below 4 mmol/l before you exercise.
- Consider the timing of when any insulin has been given.
- Always inject under the skin in your abdominal wall (over your stomach area) as insulin absorption is increased if injected into your active arm or leg

Hypos can be prevented either by reducing your insulin or increasing carbohydrate intake before, during and/or after the exercise.

Exercise and insulin dosage

It is not possible to give exact guidelines for altering insulin doses due to individual variation in responses to exercise. It is important to check your blood glucose level before, during (if possible) and after exercise until you find out what is best for you.

If your diabetes is poorly controlled or your blood glucose level is above 13mmols prior to exercise, exercise will not lower your blood glucose level; your glucose level may rise as there is not enough insulin circulating in your body. Consider injecting extra dose of quick acting insulin to reduce the level before you exercise.

Here are some general guidelines on how to adjust your insulin dosage to account for exercise:

Type of exercise	Example	Recommendations
Short duration - gentle	20 min walk to shop	No action - carry glucose
Medium duration - gentle	Swim for 30 - 45 mins	Blood glucose less than 7mmol/l - take additional 20-30g carbohydrate Blood glucose 7-10mmol/l - take additional 10-20g carbohydrate Blood glucose 10-13mmol/l - no extra Carbohydrate needed. When did you last eat? Retest during exercise.
Prolonged/intense - up to 4 hours	Aerobic class - 1 hour 4 hour bike	30-50% reduction of insulin dose prior to exercise. Extra carbohydrate may also be required.
Prolonged exercise - longer than 4 hours	A day's hiking	Reduce fast acting insulin by 50% - before, during and immediately after exercise. Additional carbohydrate snacks (without insulin) may also be necessary. For a full day's exercise you may also benefit from taking 30-50% less background insulin for that day (e.g. previous night Lantus/Levemir dose).

Information for Patients

List of carbohydrates

A glass of milk

10g



1 scoop of ice cream

10g



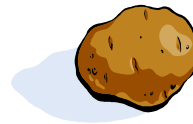
1 tablespoon of cooked rice or pasta

10g



1 egg sized potato

10g



A medium sized piece of fruit/small banana

10g



A glass of fruit juice

15g



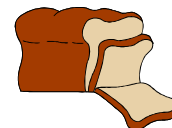
A bowl of cereal and milk

30g



2 slices of bread

30g



Contact us:

If you have any questions or concerns regarding this information, please contact **Diabetes Specialist Nurse Kirpal Marwa Tel- 0121 424 3577** or one of our CF Dieticians:- on 0121 424 1796 (direct line with answer phone) 0121 424 2000 Bleep 2425/2965/2734 or email: Joanne.barrett@heartofengland.nhs.uk, , Elizabeth.glennon@heartofengland.nhs.uk, Kirpal.marwa@heartofengland.nhs.uk.

Information for Patients

Additional Information Sources:

For more information on all aspects of living with Cystic Fibrosis you can visit the Cystic Fibrosis Trust web site at: www.cftrust.org.uk.

For local news and events the West Midlands Regional Cystic Fibrosis Unit based at Heartland Hospital has its own website at: www.heartlandscf.org.uk .

Additional Sources of Information:

You may want to visit our Health Information Centres located at the Main Entrance at Birmingham Heartlands Hospital, Tel: 0121 424 2280
or Email: healthinfo.centre@heartofengland.nhs.uk

Our commitment to confidentiality

We keep personal and clinical information about you to ensure you receive appropriate care and treatment. Everyone working in the NHS has a legal duty to keep information about you confidential.

We will always ask you for your consent if we need to use information that identifies you. We will share information with other parts of the NHS to support your healthcare needs, and we will inform your GP of your progress unless you ask us not to. You can help us by pointing out any information in your records which is wrong or needs updating.

Please use the space below to write down any questions you may want to ask: